

I. Amendments to the Claims

This listing of claims replaces without prejudice all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1 - 17 (Cancelled)

18. (Currently Amended) A system for transmitting data comprising:

a network node having an output device for outputting a signal;

a plurality of subscriber stations each having an input device and ~~being~~ each configured operable to receive said signal at a different reception-quality than at least one other of said subscriber station stations;

said signal including a (i) frame having an identifier recoverable by all of said subscriber stations ~~regardless of said reception-qualities,~~ and (ii) a remaining portion including at least one payload packet addressed to and recoverable by at least one of said subscriber stations, said identifier indicating ~~whether~~ the lowest reception-quality at which any of said subscriber station stations need

~~recover said remaining portion~~ to which a payload packet is addressed is operable to receive said signal.

19. (Currently amended) The system according to claim 18, wherein said output device comprises ~~is~~ a radio, wherein ~~and~~ said input device comprises ~~is~~ a radio, and wherein said signal comprises ~~is~~ a wireless transmission.

20. (Original) The system according to claim 18 wherein said signal is transmitted over a CDMA channel.

21. (Currently Amended) The system according to claim 18 wherein said identifier indicates a range of reception-qualities and said remaining portion includes a header having address information, said header being recoverable by said subscriber stations that are configured to receive said signal at a reception-quality within said range, said remaining portion further including at least one payload packet being recoverable by a subscriber station corresponding to said address information.

22. (Currently Amended) The system according to ~~claim 19~~ claim 21 wherein said payload packet is packaged according to an addressee subscriber station's reception-quality.

23. (Original) The system according to claim 18 wherein said reception-quality comprises ~~is~~ a measurement of signal-to-noise ratio.

24. (Original) The system according to claim 18 wherein said identifier is packaged into said frame using a modulation operation.

25. (Original) The system according to claim 18 wherein said identifier is packaged into said frame using an encoding operation.

26. (Original) The system according to claim 18 wherein said remaining portion is packaged into said frame using a modulation operation.

27. (Original) The system according to claim 18 wherein said remaining portion is packaged into said frame using a combination of an encoding operation and a modulation operation.

28. (Currently Amended) The system according to claim 27 wherein said encoding operation comprises ~~is~~ rate $1/N$ convolutional ~~evolutional~~ encoding and N equals at least two.

29. (Original) The system according to claim 28 wherein the result of said encoding operation is punctured.

30. (Currently Amended) The system according to claim 27 wherein said modulation operation comprises ~~is~~ M-ary QAM.

31. (Original) The system according to claim 18 wherein said remaining portion is packaged into said frame using an encoding operation.

32. (Currently Amended) A system for transmitting data comprising:

a network node;

a first subscriber station configured to ~~and being~~
~~operable to~~ receive a transmitted radio signal from said
network node at a first reception-quality;

at least one additional subscriber station being
configured ~~operable~~ to receive said transmitted radio signal
at a second reception-quality different from said first
reception-quality;

said network node being configured ~~operable~~ to
robustly-package a frame of data over a channel for reception
by all of said subscriber stations, ~~wherein a portion of said~~
~~frame is recoverable by all of said subscriber stations to~~
~~indicate whether a receiving subscriber station is intended~~
~~to recover a remaining portion of said frame~~ said frame
having an identifier recoverable by all of said subscriber
stations, and a remaining portion of the signal including at
least one payload packet addressed to and recoverable by at
least one of said subscriber stations, said identifier
indicating the lowest reception-quality at which any of said
subscriber stations to which a payload packet is addressed is
operable to receive said signal.

33. (Currently Amended) A subscriber station
comprising:

means for receiving a radio-signal at a reception-quality, said radio-signal carrying a frame transmitted from a network node;

means to recover an identifier from said frame regardless of said reception-quality, said identifier indicating ~~whether~~ the lowest reception-quality at which said subscriber station should recover a remaining portion of said frame that is packaged according to said reception-quality or better.

Claim 34. (Cancelled)

35. (Currently Amended) A method of packaging a frame for transmission to at least one of a plurality of subscriber stations over a multiple-access link, each of said subscriber stations having a reception-quality associated with an ability to receive a transmission over said link, said method comprising the steps of:

receiving and buffering ~~a sufficient amount of~~ at least enough data to fill said frame;

assembling said data into at least one payload packet addressed to said at least one subscriber station, said at least one payload packet being robustly-packaged according said at least one subscriber station's reception-quality;

assembling an address of said at least one subscriber station into a header packet that is robustly-packaged at least according said at least one subscriber station's reception-quality;

assembling an identifier indicating the poorest reception-quality of the at least one subscriber stations having said at least one payload packet addressed thereto, said identifier being recoverable by all subscriber stations regardless of said reception-qualities;

assembling said payload packets, said header and said ~~class~~ identifier into a frame; and

transmitting said frame over said link.

36. (Currently Amended) A method of recovering a frame transmitted from a network node to a plurality of subscriber stations over a multiple-access link, each of said subscriber stations having a reception-quality associated with said multiple-access link, said method comprising the steps of:

receiving said transmitted frame;

recovering an identifier from the frame using a recovery operation corresponding to a lowest reception-quality of said subscriber stations;

recovering a header from the frame when said identifier indicates that said receiving subscriber station is within a range of reception-qualities, said header ~~packet~~ recovered using a recovery operation corresponding to a lowest reception-quality indicated by said identifier ~~packet~~; and

recovering payload packets when said header ~~packets~~ ~~indicate~~ indicates that said payload packets are addressed to said receiving subscriber station, said payload packet recovered using a recovery operation corresponding to a reception-quality of said receiving subscriber station.

37. (Currently Amended) A frame for transmission to a plurality of subscriber stations each having a reception-quality corresponding to an ability to recover said transmission, said frame comprising:

an identifier packaged for recovery ~~regardless of~~
~~said reception-qualities~~ by all of said subscriber stations
and including ~~information representing~~ an indication of
whether a receiving subscriber station is within a range of
reception-qualities;

a header packaged for recovery by subscriber
stations within said range and including address information;
and

at least one payload packet packaged for recovery
by subscriber stations in accordance with said address
information.

38. (Original) The frame according to claim 37
wherein said identifier is packaged for recovery according to
an error rate one order of magnitude lower than a target
error rate for said frame.

39. (Original) A communications structure for
communicating between at least one network node and at least
two subscriber stations through a multiple access link, said
structure comprising:

a plurality of dedicated channels, each dedicated channel having allocated to it a portion of the transmission capacity of said link to provide communication between said network node and one of said at least two subscriber stations;

a shared channel having allocated to it a portion of the transmission capacity of said link and wherein said shared channel is operable to transmit frames of packets from said network node to said at least two subscriber stations; and

wherein at least one of said dedicated channels or said shared channel employs a modulation and/or encoding method for transmissions to a subscriber station which is selected according to the reception-quality of said subscriber station, said modulation and/or encoding method differing from a modulation and/or encoding method for transmissions to another subscriber station with a different reception-quality.

40. (New) The communications structure according to claim 39 wherein frames transmitted over said shared channel have (i) an identifier recoverable by all of said subscriber stations and a (ii) remaining portion including at least one payload packet addressed to and recoverable by at least one of said subscriber stations, said identifier indicating the

lowest reception-quality at which any of said subscriber stations to which a payload packet is addressed is operable to receive said signal.

41. (New) The communications structure according to claim 40 wherein said identifier indicates a range of reception-qualities and said remaining portion includes a header having address information, said header being recoverable by said subscriber stations that are operable to receive said signal at a reception-quality within said range, said remaining portion further including at least one payload packet being recoverable by a subscriber station corresponding to said address information.

42. (New) The communications structure according to claim 41 wherein said payload packet is packaged according to an addressee subscriber station's reception-quality.

43. (New) The system according to claim 40 wherein said reception-quality comprises a measurement of signal-to-noise ratio.

43. (New) The system according to claim 40 wherein said identifier is packaged into said frame using a modulation operation.

44. (New) The system according to claim 40 wherein said identifier is packaged into said frame using an encoding operation.

45. (New) The system according to claim 40 wherein said remaining portion is packaged into said frame using a modulation operation.

46. (New) The system according to claim 40 wherein said remaining portion is packaged into said frame using a combination of an encoding operation and a modulation operation.

47. (New) The system according to claim 46 wherein said encoding operation is rate $1/N$ convolutional encoding and N equals at least two.

48. (New) The system according to claim 47 wherein the result of said encoding operation is punctured.

49. (New) The system according to claim 46 wherein said modulation operation comprises M-ary QAM.

50. (New) The system according to claim 40 wherein said remaining portion is packaged into said frame using an encoding operation.

51. (New) The system according to claim 40 wherein said frames are transmitted over a CDMA channel.